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10/776,514	02/12/2004	Donald J. Curry	117544	3670
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EXAMINER				
SHIKHMAN, MAX				
ART UNIT		PAPER NUMBER		
2624				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27074@oliff.com
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Office Action Summary

Application No.

10/776,514

Applicant(s)

CURRY ET AL.

Examiner

MAX SHIKHMAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

Response to Amendment

1. Amendment filed 01/17/2008 has been entered and made of record.
2. Applicants' amendment has required new grounds of rejection. New grounds of rejection are therefore presented in the Office Action.
3. Applicant's arguments have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1, 8, 13, 17; 2,9,14,18; 3,11,16,20; 4,12,15,19; 5,6,7,10,22**

rejected under 35 U.S.C. 103(a) as being unpatentable over

Fazzari (US-PAT-NO: 5887073) in view of

Queiroz, "Mixed raster content (MRC) model for compound image compression" Proc. SPIE 3653, 1106 (1998) and in view of

Brumitt US-PAT-NO: 6658136, "System and process for locating and tracking a person or object in a scene using a series of range images" and in view of

Akgul US-PAT-NO: 7162073, "Methods and apparatuses for detecting classifying and measuring spot defects in an image of an object".

(Note: if no name mentioned, please assume Fazzari reference.)

() Regarding Claims 1, 8, 17;

An apparatus, comprising:

a blob (colors, properties, features, objects.) identifier (Fig3: 54. Col5 lines 15-20) that identifies one or more blobs (Col6 line 2: blobs) in image data;

(Figure 5; 96, 98 and 100 were identified as blobs of 91.

Column 5, line 37, "FIG. 4, an attribute can be defined as a collection of points in red-green-blue space (RGB) space, which can be considered the same color for the sorting application." Column 10, lines 18-21, "70 first identifies as objects all spatially contiguous groups of pixels, i.e. blobs, in each binary attribute plane and each binary property".) *a blob mapper (64) that assigns a color index (attribute) to each of one or more blobs based on a color property (Fig4: 92,93,94) of each of the blobs; and (Column 5, lines 55-56, "color classifier 64 shown in both of FIGS. 3 and 5 will classify each 24-bit RGB pixel from color image 91 into exactly one of these attributes.")*

a blob clusterer (Fig5. 64) that assigns the blobs to one or more binary foreground planes (88,90) and a grayscale background plane (89) based on the color index of each of the blobs

(Figure 5; 96, 98 and 100 were identified as blobs of 91. They were assigned to planes 88, 89, 90 because they correspond to color clouds 92-94 in Figure 4. 96 belongs to color cloud 92; see Column 5, line 44 and Column 8, lines 35-45. The color classifier is a blob clusterer.

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Column 5, line 58, "The color classifier does this by creating a binary image, or "attribute image," for each attribute from the 24-bit color image 91 that the color classifier processes.")

to generate N-layer image data; and (Fig 5: 88,89,90.)

Fazzari discloses everything as described above except, a blob identification module to maintain a global table of blobs that are no longer active; and

Brumitt discloses, a blob identification module to maintain a global table (Col10 lines 44, 48, 51,58, "table") of blobs (Col10 line 44, "region". 308) that are no longer active; (Col10 lines 44 "table" keeps track of all regions, including completed ones. 310 "segmented regions")

As Brumitt discloses, it is desirable to have a table tracking pixel-to region assignments (line 44), the table lists all regions including completed ones. This aids in image segmentation. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Brumitt's method in Fazzari, a table keeping track of all regions including segmented ones for image segmentation.

Fazzari and Brumitt disclose everything as described above except, *data of the one or more assigned binary foreground planes and the grayscale*

background plane are compressed by applying separate compression algorithms to each binary foreground plane data and grayscale background plane data.

Queiroz discloses, *data of the one or more assigned binary foreground planes and the grayscale background plane are compressed (Title, MRC) by applying separate compression algorithms (JPEG, JBIG) to each*

binary foreground plane data and (Page 4 Paragraph 2 "In both cases...", "text objects and edges are placed in the binary mask layer, thus, being efficiently encoded using standard binary coders such as MMR, JBIG")

grayscale background plane data. (Page 4 Paragraph 2, JPEG)

It is efficient to compress a binary image using JBIG and a continuous tone image, or image with "large uniform patches", with JPEG. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Queiroz's MRC method in the combined method of Fazzari and Brumitt; encode binary image with JBIG and a continuous image with JPEG.

Brumitt discloses, *merged into the grayscale background plane,* (Col 10, lines 5-19.) In growing/shrinking operation, Brumitt compares a pixel to its four neighbors—an inner pixel.

Queiroz, Fazzari and Brumitt disclose everything as described above except, *"and to identify inner blobs, wherein the image data of the inner blobs are merged into the grayscale background plane,"*

Akgul discloses Col 19 line 65, "4. If a blob is topologically enclosed by another blob, then it can be ... merged into the enclosing blob."

Col 9 line 16, "background which consists of a grayscale intensity."

As Akgul discloses, it is desirable to merge enclosed blobs, since they represent the same defect. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Akgul's method in Brumitt's region growing/shrinking, to segment unnecessary image detail.

() Regarding Claim 13:

A storage medium (Fazzari: 27) storing a set of program instructions executable on a data processing device (27), the set of program instructions (software) comprising:

(Abstract: "control console displays a graphical user interface via a computer on which the control system is implemented and includes a software application pack specifically configured for processing a particular type of food."

Column 4, lines 45-55, "A personal computer 27 implements a control processor 26 and memory-based software...")

The rest of limitations of claim 13 are disclosed in Claim 1.

() Regarding Claims 2,9,14,18:

(Queiroz reference.)

The apparatus of claim 1, wherein the blob (Queiroz. Fig4: graphics, text) clusterer

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(Page4: regions containing text and graphics are identified and represented in a separate plane.)

separates blobs (graphics, text) having a same color index (Fig4: Bird has the same color index) into one or more proximity groups (FG, M, BG planes) based on a predetermined blob separation distance (Fig4: Bird's feet, stomach, wings, have the same separation distance in the original and BG plane.), and then assigns each of the proximity groups (objects) to a separate foreground plane,

(Fig4 shows separate planes containing separate objects.)

a size (dimension) of each of the foreground planes (Fig4) being set based on spatial characteristics of pixels of blobs assigned to each of the foreground planes.

(Page 3 paragraph 3: Layers may contain different dimensions and have offsets associated with them. If a plane contains only a small object, the effective plane can be made of a bounding box around the object.)

() Regarding Claim 10:

(Queiroz reference.)

The method of claim 8, further comprising: setting a size (dimension) of each of the foreground planes based on spatial characteristics of pixels of blobs assigned to each of the foreground planes (Fig4).

(Page 3 paragraph 3: Layers may contain different dimensions and have offsets associated with them. If a plane contains only a small object, the effective plane can be made of a bounding box around the object.)

() Regarding Claims 3,11,16,20:

The apparatus of claim 1, wherein the blob clusterer assigns to a background plane one or more portions of the image data that are not assigned into any foreground plane.

(89 in Figure 5 is the "Background Attribute Image." It contains unassigned data.)

() Regarding Claims 4,12,15,19:

The apparatus of claim 1, wherein the blob mapper assigns an identical color index (attribute) to each of the one or more blobs, if a difference between color properties of the blobs is within a predetermined tolerance (Fig4: 92,93,94 is the tolerance).

(Column 5, lines 52-56, "each attribute will have a corresponding color cloud in RGB-space. Once all attributes have been defined for a given application and corresponding color clouds have been created, the color classifier 64 shown in both of FIGS. 3 and 5 will classify each 24-bit RGB pixel from color image 91 into exactly one of these attributes.")

() Regarding Claim 5:

A xerographic marking device incorporating the apparatus of claim 1.

(Column 7, lines 15-19 "Alternatively, any optical imaging device can be substituted for the camera, including a grey-scale video camera, a photocell

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device, a laser scanner, an ultraviolet camera, an infrared camera, a Magnetic Resonance Imaging (MRI) device, or a spectroscopic scanner.”)

() Regarding Claim 6:

A marking device incorporating the apparatus of claim 1.

(49 in Figure 2 is a pen, which is a marking device, incorporating the overall apparatus.

Column 7, lines 15-19 “Alternatively, any optical imaging device can be substituted for the camera, including a grey-scale video camera, a photocell device, a laser scanner, an ultraviolet camera, an infrared camera, a Magnetic Resonance Imaging (MRI) device, or a spectroscopic scanner.”)

() Regarding Claim 7:

A digital photocopier incorporating the apparatus of claim 1.

(Column 7, lines 15-19 “Alternatively, any optical imaging device can be substituted for the camera, including a grey-scale video camera, a photocell device, a laser scanner, an ultraviolet camera, an infrared camera, a Magnetic Resonance Imaging (MRI) device, or a spectroscopic scanner.”)

() Regarding Claim 22:

Brumitt discloses, 22. (New) *The apparatus of claim 1, wherein the blob (region) identification module merges (Col10 line 53 “merged”)*

two or more previously separated blobs (Col10 lines 49-50) into a single blob

if the previously separated blobs become connected (colliided. Col10 lines 49, “...if the current pixel is within one disparity of both neighbors and they are in

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different regions then these regions are deemed to have "collided" and a notation is made in the table for the pixel location that the two adjoining regions should be merged.")

and the previously separated blobs agree in color. (Fazzari Figs 3-5, Col8 lines 40-45. Fazzari discloses color classification and segmentation as described with regard to Claim 1.)

6. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fazzari (US-PAT-NO: 5887073) in view of Queiroz, "Mixed raster content (MRC) model for compound image compression", in view of Brumitt US-PAT-NO: 6658136 as applied to Claim 8 above, and further in view of Majid Rabbani, "An overview of the JPEG 2000 still image compression standard", Signal Processing: Image Communication, Volume 17, Issue 1, January 2002, Pages 3-48.

() Regarding Claim 21:

Fazzari and Queiroz disclose everything as described above except, *creating a color tree from the assigned blobs.*

Rabbani, who deals with JPEG 2000, discloses on page 23 Fig 15, "Example of compressed data associated with various sub-bitplane coding passes"; on Page 27 Col 2, "Component–position–resolution–layer progression (CPRL)". The *color tree* is the bitplanes from all the codeblocks, arranged from MSB to LSB, arranged by color component.

Since Queiroz discloses on page 4 paragraph 2, "background plane is suitable for continuous tone image compressors such as JPEG or JPEG-2000", it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Rabbani in the method of Queiroz, both are discussing JPEG 2000; partition data into codeblocks, where each codeblock is arranged from most significant coefficients to least significant coefficients and arrange data in progression by component. This creates a color tree.

Conclusion

7. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. DeLeeuw discloses, "Placing and monitoring transparent user interface elements in a live video stream as a method for user input."

Chang, US-PAT-NO: 6741655.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Max Shikhman whose telephone number is (571) 270-1669. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JINGGE WU can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Max Shikhman

3.13.2008

/J. W./

Supervisory Patent Examiner, Art Unit 2624